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## Published

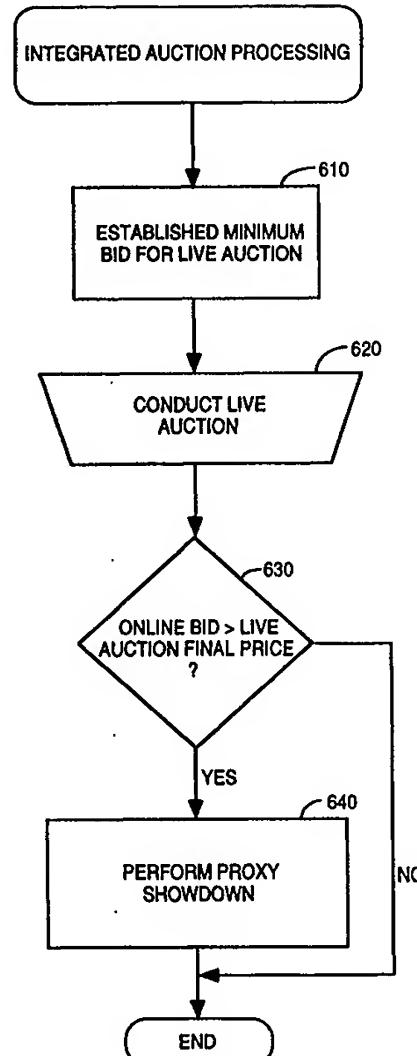
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Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: INTEGRATED AUCTION FOR REMOTE ONLINE BIDDERS AND LIVE PARTICIPANTS AT AN AUCTION SITE

## (57) Abstract

A method and apparatus are provided for conducting an integrated auction that incorporates various features of traditional and online auctions. According to one aspect of the present invention, the integrated auction includes a live, in-person auction component (620) and an online bidding environment component. Bidding information associated with an item in the online bidding environment is updated to reflect a current bid associated with the item in the live, in-person auction. During the live, in-person auction, a bid may be accepted from an online bidder in the online environment that reflects a maximum price the online bidder is willing to pay for the item. Subsequently, the system bids on behalf of the online bidder against one or more live bidders that are participating in the live, in-person auction based upon the maximum price (640).



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## **INTEGRATED AUCTION FOR REMOTE ONLINE BIDDERS AND LIVE PARTICIPANTS AT AN AUCTION SITE**

This application claims the benefit of U.S. Provisional Application No. 60/111,717, filed 12/8/98.

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### **FIELD OF THE INVENTION**

The invention relates generally to the fields of auctioning and online commerce. More particularly, the invention relates to an integrated auction format that incorporates features of both Internet and traditional, real world auctions.

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### **BACKGROUND OF THE INVENTION**

With the advent of online auctioning pioneered by eBay Inc., the assignee of the present invention, more and more Internet users are realizing the ease and convenience of buying items online. As the leading person-to-person trading site, buyers are compelled to trade on eBay's web site due to the large amount of content available. Similarly, sellers are attracted to eBay to conduct business where there are the most buyers. eBay currently provides over two million new auctions, and 250,000 new items every day from which users may choose.

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Auction houses that run live, real-time, on-site auctions ("traditional auctions") continue to experience much success. However, geographic barriers, travel costs, and other constraints limit the participation in such auctions.

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It is desirable, therefore, to expand the reach of traditional auctions via the Internet. In particular, it would be advantageous to incorporate the best of both Internet and traditional auctions into an integrated auction format.

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### **BRIEF SUMMARY OF THE INVENTION**

A method and apparatus are described for conducting an integrated auction that incorporates various features of traditional and online auctions. According to one aspect of the present invention, the integrated auction includes a live, in-person auction component and an online bidding environment component. Bidding information associated with an item in

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the online bidding environment is updated to reflect a current bid associated with the item in the live, in-person auction. During the live, in-person auction, a bid may be accepted from an online bidder in the online environment that reflects a maximum price the online bidder is willing to pay for the item. Subsequently, the system bids on behalf of the online bidder against one or more live bidders that are participating in the live, in-person auction based upon the maximum price.

Other features of the present invention will be apparent from the accompanying drawings and from the detailed description which follows.

#### 10 BRIEF DESCRIPTION OF THE DRAWINGS

The present invention is illustrated by way of example, and not by way of limitation, in the figures of the accompanying drawings and in which:

15 **Figure 1** is a simplified view of an exemplary client-server environment in which the online portion of an integrated auction may occur according to one embodiment of the present invention.

**Figure 2** is an exemplary online auction site screen that allows online bidders to participate in an integrated auction according to one embodiment of the present invention.

20 **Figure 3** is an example of a computer system upon which one embodiment of the present invention may be implemented.

**Figure 4** is a high level illustration of the interaction between various devices and processes according to one embodiment of the present invention.

**Figure 5** conceptually illustrates the stages of an integrated auction according to one embodiment of the present invention.

25 **Figure 6** is a flow diagram illustrating integrated auction processing according to one embodiment of the present invention.

#### DETAILED DESCRIPTION

A method and apparatus are described for carrying out an integrated auction that incorporates various features of traditional and online auctions. In the following description, for the purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding of the present invention. It will be apparent, however, to one skilled in the art that the present invention may be practiced without some of these specific details. In other instances, well-known structures and devices are shown in block diagram form.

35 As will be described in greater detail below, the present invention includes features that seek to enhance the traditional auctioning experience. According to one embodiment, an integrated auction incorporates various features of traditional and Internet auctions (also

referred to as online auctions). In a first stage of the integrated auction, e.g., the “pre-auction bidding stage,” a starting bid for a traditional, live auction may be established based upon bids received from online bidders. Subsequently, in a second stage of the integrated auction, e.g., the “live auction stage,” a live auction is conducted by an auction house, such 5 as Guernsey’s, using the highest bid from the pre-auction bidding stage. During the live auction stage, bidding information is updated on the online auction site and online bidders may submit additional maximum proxy amounts. Finally, in an optional third stage of the integrated auction, e.g., the “proxy showdown stage,” if an online bidder’s maximum proxy price is greater than the highest bid from the live auction stage, then the integrated auction 10 returns to the live auction until the proxy price has been met. Advantageously, in this manner, the reach of traditional auctions may be expanded via the Internet.

In the preferred embodiment, the steps of the present invention are embodied in machine-executable instructions. The instructions can be used to cause a general-purpose or special-purpose processor which is programmed with the instructions to perform the steps of 15 the present invention. Alternatively, the steps of the present invention might be performed by specific hardware components that contain hardwired logic for performing the steps, or by any combination of programmed computer components and custom hardware components.

The present invention may be provided as a computer program product which may include a machine-readable medium having stored thereon instructions which may be used to 20 program a computer (or other electronic devices) to perform a process according to the present invention. The machine-readable medium may include, but is not limited to, floppy diskettes, optical disks, CD-ROMs, and magneto-optical disks, ROMs, RAMs, EPROMs, EEPROMs, magnet or optical cards, flash memory, or other type of media / machine-readable medium suitable for storing electronic instructions. Moreover, the present invention 25 may also be downloaded as a computer program product, wherein the program may be transferred from a remote computer (e.g., a server) to a requesting computer (e.g., a client) by way of data signals embodied in a carrier wave or other propagation medium via a communication link (e.g., a modem or network connection).

### 30 Client-Server Environment

Figure 1 is a simplified view of an exemplary client-server environment, such as the World Wide Web (the Web), in which the online portion of an integrated auction may take place. The architecture of the Web follows a conventional client-server model. The terms “client” and “server” are used to refer to a computer’s general role as a requester of data 35 (the client) or provider of data (the server). Web clients 105 and Web servers 110 communicate using a protocol such as HyperText Transfer Protocol (HTTP). In the Web environment, Web browsers reside on clients and render Web documents (pages) served by

the Web servers. The client-server model is used to communicate information between clients 105 and servers 110. Web servers 110 are coupled to the Internet 100 and respond to document requests and/or other queries from Web clients 105. When a user selects a document by submitting its Uniform Resource Locator (URL), a Web browser, such as  
5 Netscape Navigator or Internet Explorer, opens a connection to a server 110 and initiates a request (e.g., an HTTP get) for the document. The server 110 delivers the requested document, typically in the form of a text document coded in a standard markup language such as HyperText Markup Language (HTML).

10 Exemplary Online Auctioning Site Interface

**Figure 2** is an exemplary online auction site screen that allows online bidders to participate in an integrated auction. According to one embodiment, when an online bidder requests to view items associated with an integrated auction, screen 200 is presented with a textual list of items 205. In this example, each item 210 includes a hypertext link 215 having a title (or brief description) of the item for sale, an indication 220 of whether or not an image of the item is available, the current minimum bid 230, the number of bids received 240, and an auction ending date and/or time 250. Responsive to the selection of the hypertext link 215, a subsequent screen (not shown) may prompt the online bidder to enter his/her maximum bid for the item 210. As will be described further below, by providing a maximum bid amount, a proxy bidding system may bid on behalf of the online bidder as necessary by increasing the online bidder's bid by the current bid increment until the maximum is reached. Advantageously, in this manner, the online bidder need not keep track of the auction as it proceeds and is assured he/she will not be outbid at the last minute – unless the maximum specified is exceeded.

25

Exemplary Computer System

A computer system 300 representing an exemplary server in which features of the present invention may be implemented will now be described with reference to **Figure 3**. Computer system 300 comprises a bus or other communication means 301 for communicating information, and a processing means such as processor 302 coupled with bus 301 for processing information. Computer system 300 further comprises a random access memory (RAM) or other dynamic storage device 304 (referred to as main memory), coupled to bus 301 for storing information and instructions to be executed by processor 302. Main memory 304 also may be used for storing temporary variables or other intermediate information during execution of instructions by processor 302. Computer system 300 also comprises a read only memory (ROM) and/or other static storage device 306 coupled to bus 301 for storing static information and instructions for processor 302.

A data storage device 307 such as a magnetic disk or optical disc and its corresponding drive may also be coupled to computer system 300 for storing information and instructions. Computer system 300 can also be coupled via bus 301 to a display device 321, such as a cathode ray tube (CRT) or Liquid Crystal Display (LCD), for displaying information to a computer user. Typically, an alphanumeric input device 322, including alphanumeric and other keys, may be coupled to bus 301 for communicating information and/or command selections to processor 302. Another type of user input device is cursor control 323, such as a mouse, a trackball, or cursor direction keys for communicating direction information and command selections to processor 302 and for controlling cursor movement on display 321.

10 A communication device 325 is also coupled to bus 301 for accessing remote servers via the Internet, for example. The communication device 325 may include a modem, a network interface card, or other commercially available network interface devices, such as those used for coupling to an Ethernet, token ring, or other type of network. In any event, in this manner, the computer system 300 may be coupled to a number of clients and/or other servers via a conventional network infrastructure, such as a company's Intranet and/or the Internet, for example.

### System Overview

20 **Figure 4** is a high level illustration of the interaction between various devices and processes according to one embodiment of the present invention. According to the embodiment depicted, an online auction site 400 may comprise one or more listing servers 410. In this example, the listing servers 410 include a listing management process 415, a proxy bidding process 425, and a live auction interface 430. Clients 470 interact with the listing management process 415 and the proxy bidding process 425 to view information 25 about items for sale and submit proxy prices, respectively.

The listing management process 415 interacts with online bidders and provides them with information about the items in which they are interested. The listing management process 415 may support a text-based item listing format, such as that depicted in **Figure 2**, and/or a **GALLERY™** presentation format that includes thumbnail images of the items for sale 30 as described in co-pending US Patent Application No. 09/177,726, entitled "Information Presentation and Management in an Online Trading Environment" and assigned to the assignee of the present invention (**GALLERY** is a trademark of eBay Inc. of San Jose, CA).

35 The proxy bidding process 425 tracks the maximum amounts that online bidders are willing to pay for the items 210. Based upon the maximum amounts provided, the proxy bidding process 425 automatically submits bids on behalf of the online bidders as other bidders (online or on-site bidders) increase the bid price.

The live auction interface 430 provides an interface by which online bids may be communicated to the on-site bidders and live bids may be communicated to the proxy bidding process 425 and updated on various online auction site screens.

While, in order to facilitate explanation, the listing servers 410 are generally discussed as if they were a single device, in actuality, the listing servers 410 may comprise multiple physical and/or logical devices connected in a distributed architecture, and the various functions performed may actually be distributed among multiple devices. For example, any function can be implemented on any number of machines or on a single machine. Also, any process may be divided across multiple machines.

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#### Exemplary Stages of an Integrated Auction

**Figure 5** conceptually illustrates the stages of an integrated auction according to one embodiment of the present invention. In this example, an integrated auction comprises three separate and distinct stages: a pre-auction bidding stage 530, a live auction stage 540, and a proxy showdown stage 550. Bidding results may be fed from one stage to the next and the results from a previous stage may serve as the floor for the following stage. For example, an initial round of online bidding 530 taking place over a predetermined period of time may establish a starting bid 510 for the live auction stage 540. At the conclusion of the live auction stage 540, if one or more online bidders have submitted maximum proxy prices that are greater than the final bid from the live auction stage 540, the proxy showdown stage 550 is triggered in which the live auction continues until the maximum proxy price has been met.

#### Integrated Auction Flow

Referring now to the flow diagram of **Figure 6**, exemplary integrated auction processing will now be described. At step 610, a minimum bid for the live auction stage 540 is established by an online auction site 400. For example, one or more online bidders may submit maximum bid amounts to the proxy bidding process 425 to have the proxy bidding process 425 bid on their behalf. Other bidders may choose to monitor the pre-auction bidding stage 530 and periodically submit bids. When the predetermined time period for the pre-auction bidding stage 530 expires, the highest bid is presented to the auction house via the live auction interface 430. In this manner, the starting bid for the live auction stage 540 is established in a new and exciting way, thereby creating additional hype about the auction. At step 620, the auction house conducts a live auction starting the bidding at the dollar amount provided by the online auction site 400. During the live auction, live bids by the on-site bidders may be communicated to the online bidders via the live auction interface 430. Additionally, the online bidders may be provided with teleconferencing or other means of monitoring the progress of the live auction 540. At any rate, at the conclusion of the live

auction, the final bid is input into the live auction interface 430. At step 630, a determination is made whether or not to perform a proxy showdown. If one or more online bidders have submitted a maximum proxy price greater than the highest bid from the live auction stage, then processing continues with step 640. Otherwise, the integrated auction is complete. At 5 step 640, the on-site bidders are pitted against the one or more online bidders' proxies. As above, live bids are presented to the online auction site 400 via the live auction interface 430 to allow the online bidders to view near real-time updates. As explained previously, the proxy bidding process 425 will automatically bid on behalf of the online bidders as necessary until the maximum is exceeded. Therefore, step 640 continues until either all 10 maximum proxy prices have been exceeded or until no further live bids are received.

In the foregoing specification, the invention has been described with reference to specific embodiments thereof. It will, however, be evident that various modifications and changes may be made thereto without departing from the broader spirit and scope of the 15 invention. The specification and drawings are, accordingly, to be regarded in an illustrative rather than a restrictive sense.

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## CLAIMS

What is claimed is:

- 5    1. A method comprising:  
          updating bidding information associated with an item in a online environment to  
          reflect a current bid associated with the item in a live, in-person auction;  
          accepting a bid from an online bidder in the online environment reflecting the online  
          bidder's maximum proxy price; and  
10      bidding on behalf of the online bidder against one or more live bidders that are  
          participating in the live, in-person auction based upon the maximum proxy  
          price.
- 15      2. The method of claim 1, wherein said bidding one behalf of the online bidder  
          comprises bidding an amount that exceeds the current bid so long as the maximum  
          proxy price has not been exceeded and so long as the current bid is not that of the  
          online bidder.
- 20      3. The method of claim 1, further comprising:  
          prior to the live, in-person auction, establishing a starting bid for the item by  
          performing a pre-auction bidding process in the online environment for a  
          predetermined amount of time; and  
          communicating the starting bid for the item to the live, in-person auction.
- 25      4. A method comprising:  
          establishing a starting bid for an item for a live portion of an auction by performing a  
          pre-auction bidding process in an online environment for a predetermined  
          amount of time;  
          communicating the starting bid for the item to the live portion of the auction; and  
          during the live auction portion of the auction  
            updating bidding information associated with the item in the online  
            environment to reflect a current bid associated with the item in the live  
            portion of the auction,
- 30      accepting a bid from an online bidder in the online environment reflecting the  
          online bidder's maximum proxy price, and  
          bidding against one or more live bidders that are present at the live auction  
          portion of the auction until the maximum proxy price has been met.

5. A computer system comprising:  
a storage device having stored therein a one or more routines for integrating an online  
bidding process with a live portion of an auction;  
a processor coupled to the storage device for executing the one or more routines to  
provide feedback to online bidders in an online environment during the live  
portion of the auction and serve as a proxy bidder for the online bidders,  
where:  
a starting bid is established for an item for the live portion of the auction by  
performing a pre-auction bidding process in the online environment  
for a predetermined amount of time;  
feedback is provided to the online bidders by updating bidding information  
associated with the item in the online environment to reflect a current  
bid associated with the item during the live portion of the auction, and  
proxy bidding is accomplished by accepting a bid from one or more of the an online bidders  
reflecting the online bidders' maximum proxy price and bidding on behalf of the one or  
more online bidders against one or more live bidders participating in the live portion of the  
auction until each of the one or more online bidders' maximum proxy price has been met.

6. A machine-readable medium having stored thereon data representing sequences of  
instructions, the sequences of instructions which, when executed by a processor, cause the  
processor to perform the steps of:  
establishing a starting bid for an item for a live portion of an auction by performing a  
pre-auction bidding process in an online environment for a predetermined  
amount of time;  
25 communicating the starting bid for the item to the live portion of the auction; and  
during the live auction portion of the auction  
updating bidding information associated with the item in the online environment to  
reflect a current bid associated with the item in the live portion of the auction,  
accepting a bid from an online bidder in the online environment reflecting the online  
30 bidder's maximum proxy price, and  
bidding against one or more live bidders that are present at the live auction portion of  
the auction until the maximum proxy price has been met.

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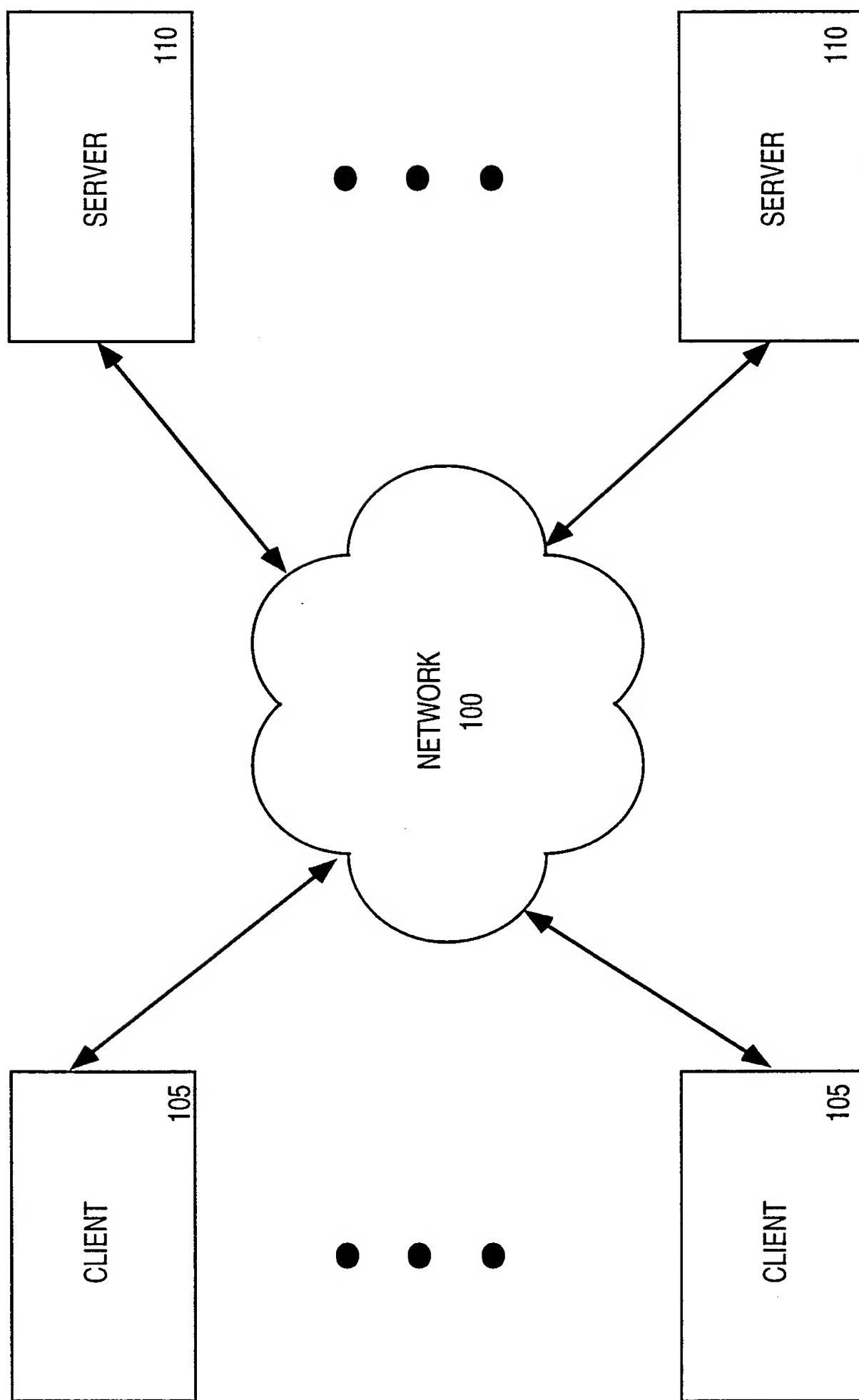


FIG. 1

200

260

[Current](#) || [New Today](#) || [Ending Today](#) || [Completed](#) || [Going](#).[Going](#),[Gone](#)

<a href="#">NEW!</a> <a href="#">Vintage handmade paper florals on wood tray</a>	<a href="#">PIC</a>	\$2,600	-	10/26
<a href="#">NEW!</a> <a href="#">**SUPER TRAMP ART 3 STORY BUILDING BOX**</a>	<a href="#">PIC</a>	\$100,000	2	10/26
<a href="#">NEW!</a> <a href="#">Mexican Pottery Vase No. 1</a>	<a href="#">PIC</a>	\$5,000	1	10/26
<a href="#">NEW!</a> <a href="#">Mexican Pottery Vase No. 2</a>	<a href="#">PIC</a>	\$5,000	16	10/26
<a href="#">NEW!</a> <a href="#">Antique</a>		\$3,000	68	10/26
<a href="#">NEW!</a> <a href="#">Mexican Pottery Vase No. 3</a>	<a href="#">PIC</a>	\$5,000	-	10/26
<a href="#">NEW!</a> <a href="#">Mexican Pottery Vase No. 4</a>	<a href="#">PIC</a>	\$5,000	-	10/26
<a href="#">NEW!</a> <a href="#">Hand painted Pottery Wine Jug with Cup</a>	<a href="#">PIC</a>	\$40,000	5	10/26
<a href="#">NEW!</a> <a href="#">(SUPER!) Folk Art Tucan Head Cane</a>	<a href="#">PIC</a>	\$49,000	-	10/26
<a href="#">NEW!</a> <a href="#">SCRIMSHAW</a>	<a href="#">PIC</a>	\$60,000	-	10/26
<a href="#">NEW!</a> <a href="#">Folk Art Hand Carved Light House</a>		\$25,000	-	10/26
<a href="#">NEW!</a> <a href="#">Antique Hand Made Adirondak 31 Plant Stand</a>	<a href="#">PIC</a>	\$9,990	8	10/26
<a href="#">NEW!</a> <a href="#">BUFFALO, MINNESOTA FISH DECOY</a>		\$15,000	4	10/26
<a href="#">NEW!</a> <a href="#">BLACK FOLK ART</a>		\$22,000	20	10/26
<a href="#">NEW!</a> <a href="#">HOLY FRUJOLE! TRIPLE KITCHEN VIRGIN APPEARS</a>	<a href="#">PIC</a>	\$29,990	98	10/26

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Top : Integrated Auction

FIG. 2

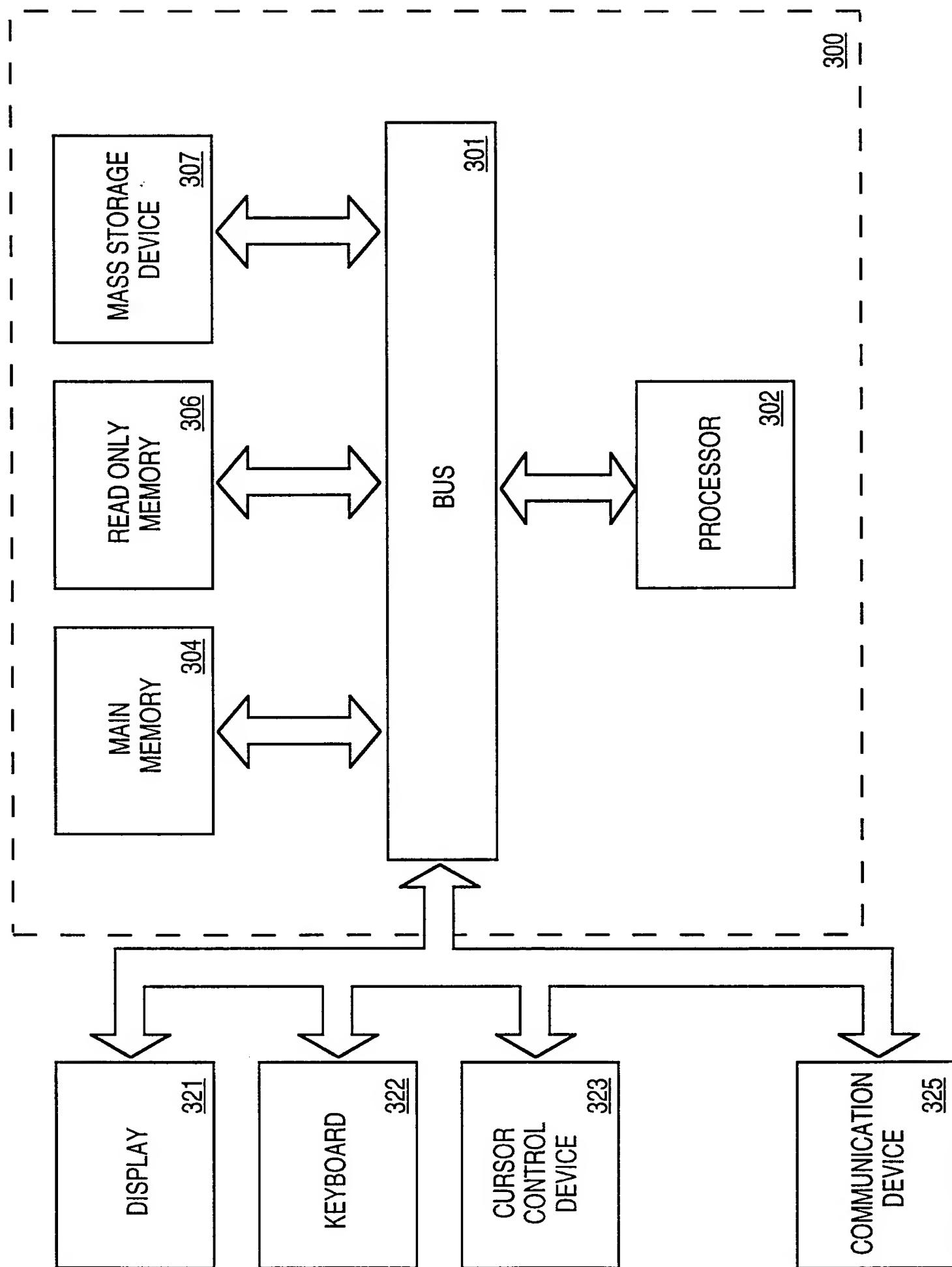
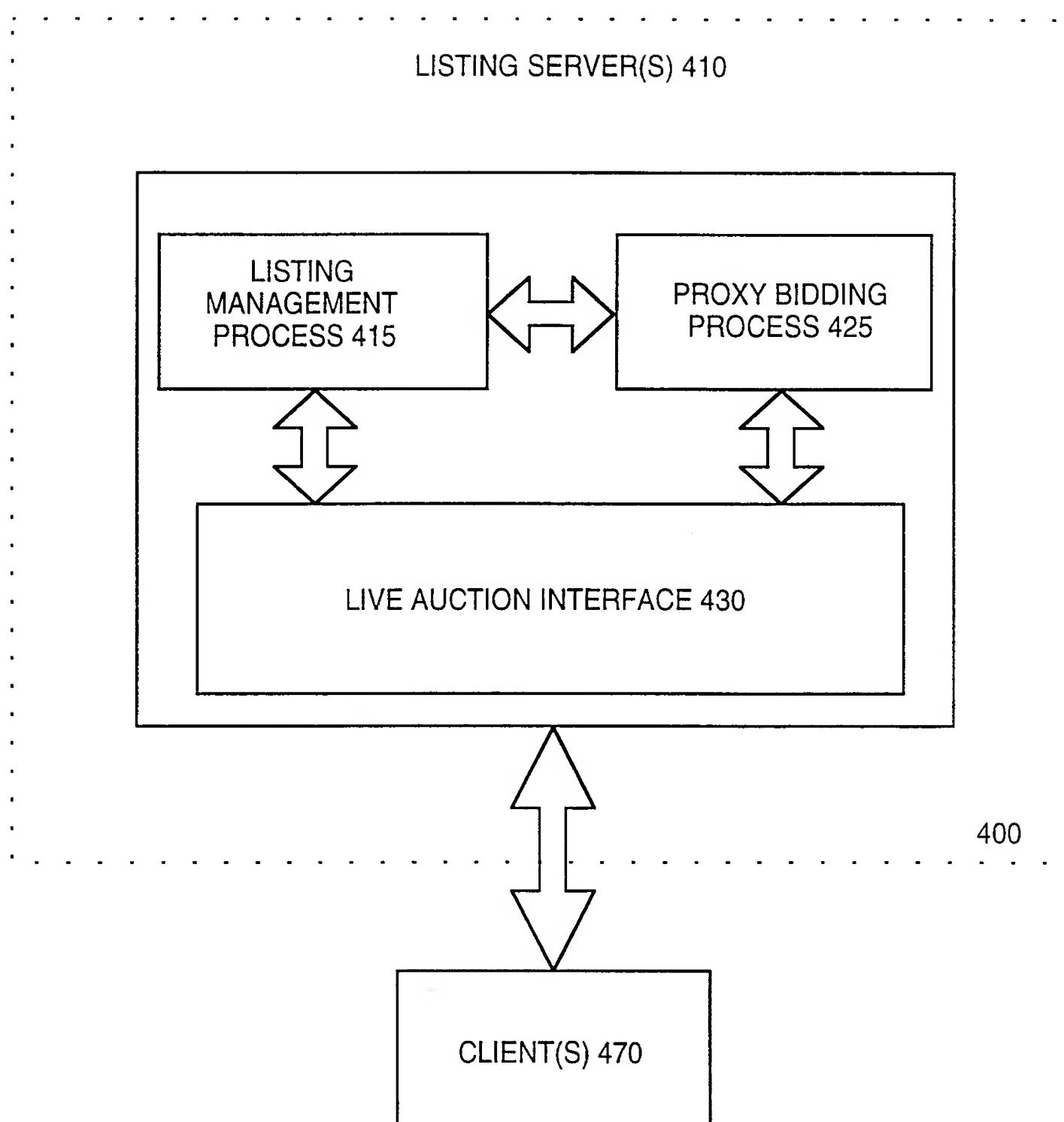
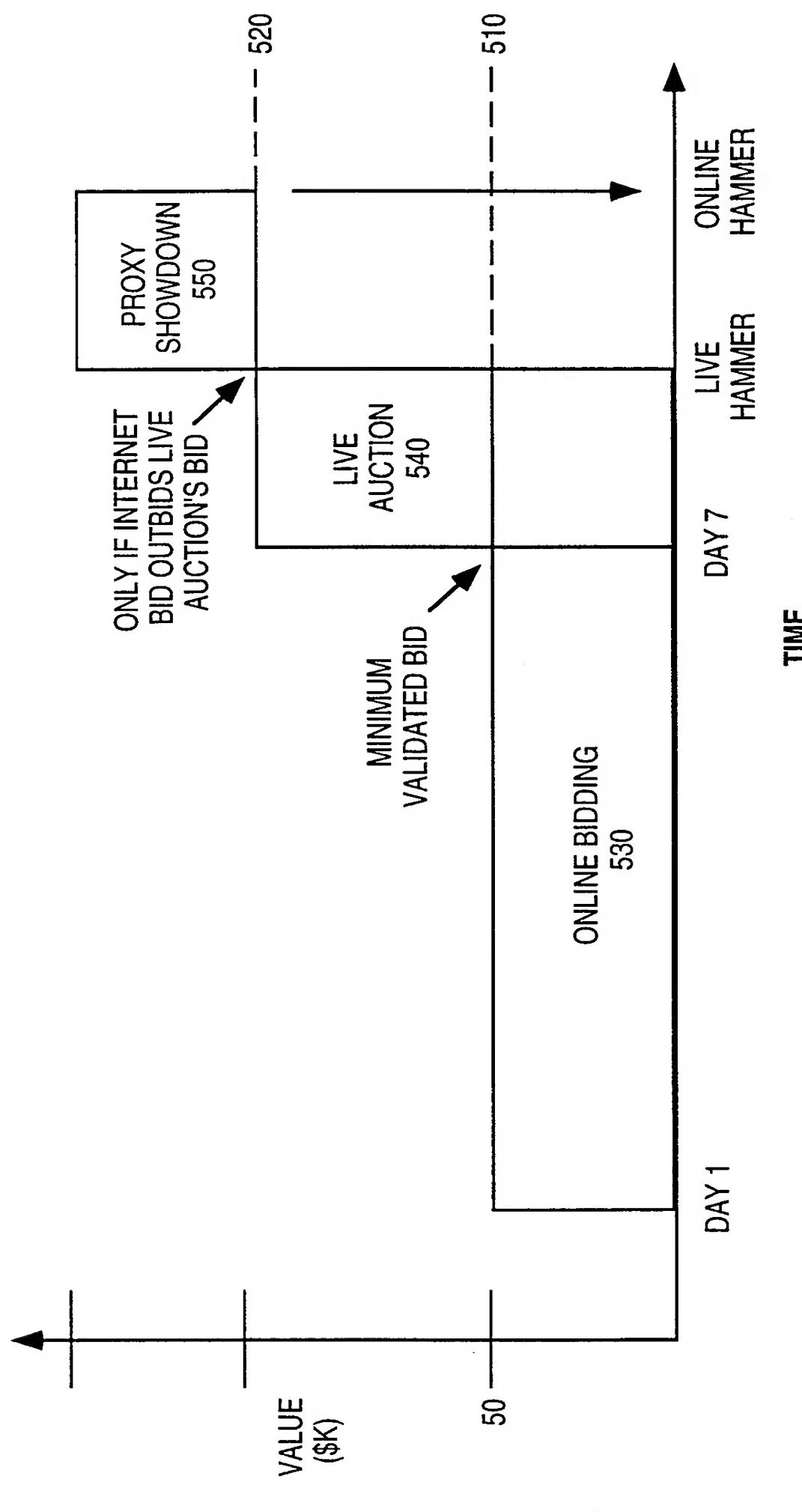


FIG. 3

**FIG. 4**

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FIG. 5

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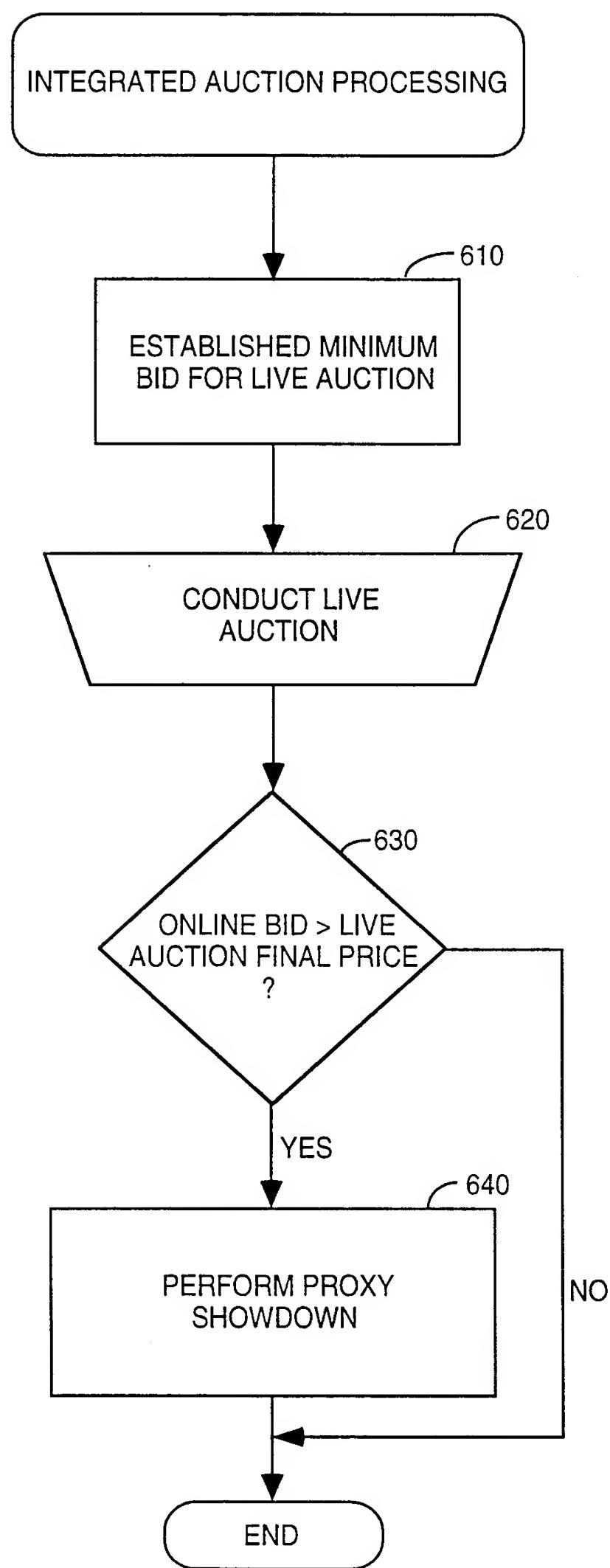


FIG. 6

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US99/29312

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : G06F 17/30

US CL : 705/37, 80

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/37, 80

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Extra Sheet.

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y, E	WO 99/63461 A (DINWOODIE) 09 December 1999 (09.12.99), Entire Document , especially page 5, lines 24 - page 6, line 21, Fig. 1, 3	1-6
Y	PREIST et al. Adaptive Agents In Persistent Shout Double Auction. ACM International Conference on Information and Computation Economies. October 1998, pages 14, first and third paragraph.	1-6
A	US 4,789,928 A (FUJISAKI) 06 December 1988 (06.12.88), Entire Document.	1, 4-6
A, P	US 5,890,138 A (GODIN et al.) 30 March 1999 (30.03.99), Entire Document.	1,4-6

 Further documents are listed in the continuation of Box C. 

See patent family annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

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Date of mailing of the international search report

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US99/29312

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,845,265 A (WOOLSTON) 01 December 1998 (01.12.98), Col. 6, lines 10-44.	1,4-6
A	US 5,794,219 A (BROWN) 11 August 1998 (11.8.98), Abstract.	1, 4-6
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A	US 5,835,896 A (FISHER et al.) 10 November 1998 (10.11.98), Entire Document.	1,4-6

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US99/29312

**B. FIELDS SEARCHED**

Electronic data bases consulted (Name of data base and where practicable terms used):

**Dialog**

Search terms: live auction, commodity trading, stock trading, online auction, human proxy, real time, live auctioneer, auction houses, livebid.com, amazon.com, ebay, butterfield & butterfield, automobile auction, proxy bid, bidders, human, person, live, update, commodity auction.